

Claims:

1. A method for coating a filamentous article comprising applying a voided or otherwise substantially uneven coating to at least some of the exposed portion of a filamentous article and passing the substantially unevenly-coated filamentous article through an improvement station comprising a plurality of coating-wetted rolls that contact and re-contact the wet coating at different positions along the length of the filamentous article, wherein the periods of the rolls improve the uniformity of the coating.
- 10 2. A method according to claim 1 wherein the voided or otherwise substantially uneven coating is applied by dripping the coating liquid onto the filamentous article or onto a roll.
- 15 3. A method according to claim 1 wherein the voided or otherwise substantially uneven coating is applied by spraying the coating liquid onto the filamentous article or onto a roll.
4. A method according to claim 1 wherein the substantially uneven coating is periodically applied and the application period is adjusted to improve the uniformity of the coating.
5. A method according to claim 1 comprising at least three rolls.
- 20 6. A method according to claim 1 wherein the rolls have the same period of contact with the filamentous article.
7. A method according to claim 1 wherein the rolls do not all have the same period of contact with the filamentous article.
- 25 8. A method according to claim 7 wherein the rolls all have different periods of contact with the filamentous article.
9. A method according to claim 7 wherein the rotational periods of the rolls are not periodically related.

10. A method according to claim 7 wherein the filamentous article has at least five contacts with the rolls following application of the substantially uneven coating.

11. A method according to claim 7 wherein the filamentous article has at least 5 contacts with the rolls following application of the substantially uneven coating.

12. A method according to claim 1 wherein the filamentous article has at least 13 contacts with the rolls following application of the substantially uneven coating.

10 13. A method according to claim 1 wherein the filamentous article has a direction of motion and the direction of rotation of at least one of the rolls is the same as the direction of motion.

14. A method according to claim 13 wherein the direction of rotation of at least two of the rolls is the same as the direction of motion.

15 15. A method according to claim 13 wherein the direction of rotation of all the rolls is the same as the direction of motion.

16. A method according to claim 15 wherein there is substantially no slippage between the rolls and the filamentous article.

17. A method according to claim 1 wherein at least one of the rolls is grooved.

20 18. A method according to claim 1 wherein all of the rolls are grooved.

19. A method according to claim 1 wherein a voided coating is applied to the filamentous article and converted by contact with the rolls to a void-free coating.

20. A method according to claim 1 wherein the coating is converted to have an average caliper from 1 to about 10 micrometers.

21. A method according to claim 1 wherein the coating is converted to have an average caliper from 1 to about 5 micrometers.

22. A method according to claim 1 wherein the filamentous article comprises an optical fiber.

5 23. A method for coating a filamentous article comprising applying a voided or otherwise substantially uneven coating to a rotating substrate, contacting the coating with a plurality of coating-wetted rolls that contact and re-contact the coating at different positions around the circumference of the rotating substrate, and transferring the coating to the filamentous article.

10 24. A method according to claim 23 wherein at least three rolls contact the wet coating on the rotating substrate.

25. A method according to claim 24 wherein the rolls have different periods of contact.

15 26. A method according to claim 23 wherein at least five rolls contact the wet coating on the rotating substrate.

27. A method according to claim 23 wherein the coating is applied as a pattern of stripes.

28. A method according to claim 23 wherein the rolls comprise disks whose peripheral edges contact a coating-wetted groove in the rotating substrate.

20 29. A method according to claim 23 wherein the rotating substrate comprises a transfer belt.

30. A device comprising a coating station that directly or indirectly applies a substantially uneven coating to at least some of the exposed portion of a filamentous article and an improvement station comprising two or more rotating rolls that periodically contact and re-contact the wet coating at different positions along the length of the filamentous article, wherein the periods of the rolls improve the uniformity of the coating.

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31. A device according to claim 30 wherein the coating station drips the coating liquid onto the filamentous article or onto a roll.

32. A device according to claim 30 wherein the coating station sprays the coating liquid onto the filamentous article or onto a roll.

5 33. A device according to claim 30 wherein the coating station periodically applies the coating liquid and the application period can be adjusted to improve the uniformity of the coating.

34. A device according to claim 30 comprising at least three rolls.

10 35. A device according to claim 30 wherein the rolls have the same period of contact with the filamentous article.

36. A device according to claim 30 wherein the rolls do not all have the same period of contact with the filamentous article.

37. A device according to claim 36 wherein the rolls all have different periods of contact with the filamentous article.

15 38. A device according to claim 36 wherein the rotational periods of the rolls are not periodically related.

39. A device according to claim 36 wherein the filamentous article has at least five contacts with the rolls following application of the substantially uneven coating.

20 40. A device according to claim 36 wherein the filamentous article has at least eight contacts with the rolls following application of the substantially uneven coating.

41. A device according to claim 30 wherein the filamentous article has at least 13 contacts with the rolls following application of the substantially uneven coating.

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42. A device according to claim 30 wherein the filamentous article has a direction of motion and the direction of rotation of at least one of the rolls is the same as the direction of motion.

43. A device according to claim 42 wherein the direction of rotation of at least two of the rolls is the same as the direction of motion.

5 44. A device according to claim 42 wherein the direction of rotation of all the rolls is the same as the direction of motion.

45. A device according to claim 44 wherein there is substantially no slippage between the rolls and the filamentous article.

10 46. A device according to claim 30 wherein at least one of the rolls is grooved.

47. A device according to claim 30 wherein all of the rolls are grooved.

48. A device according to claim 30 wherein a voided coating is applied to the filamentous article and converted by contact with the rolls to a void-free coating.

15 49. A device according to claim 30 wherein the coating is converted to have an average caliper from 1 to about 10 micrometers.

50. A device according to claim 30 wherein the coating is converted to have an average caliper from 1 to about 5 micrometers.

51. A device comprising a coating station that applies a substantially uneven coating to a rotating substrate, an improvement station comprising two or 20 more rotating rolls that periodically contact and re-contact the wet coating at different positions along the length of the rotating substrate whereby the coating becomes more uniform, and a transfer station for transferring the resulting more uniform coating to the filamentous article.

25 52. A device according to claim 51 comprising at least three rolls that contact the wet coating on the rotating substrate.

53. A device according to claim 52 wherein the rolls have different periods of contact.

54. A device according to claim 51 comprising at least five rolls that contact the wet coating on the rotating substrate.

5 55. A device according to claim 51 wherein the coating station applies a pattern of stripes.

56. A device according to claim 51 wherein the rolls comprise disks whose peripheral edges contact a coating-wetted groove in the rotating substrate.

57. A device according to claim 51 wherein the rotating substrate comprises a transfer belt.

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